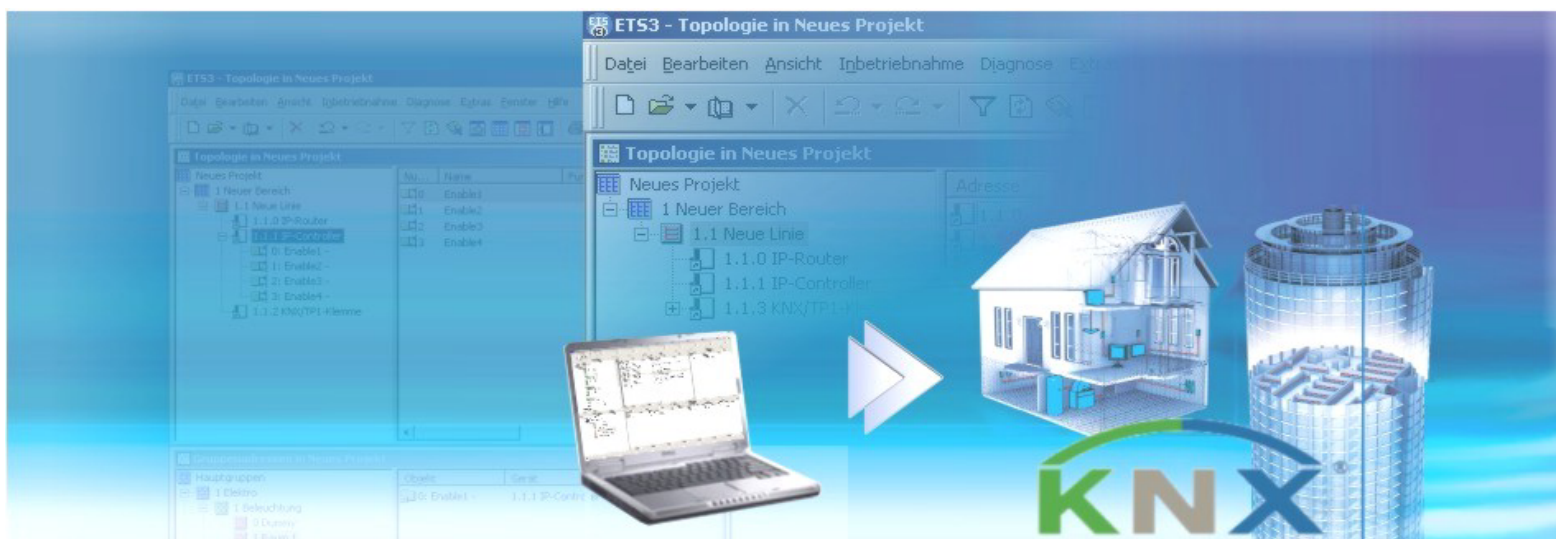


WAGO ETS3 Plugin

for the Configuration of WAGO KNX Devices



User Manual

Technical description

Version 1.0.6

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Every conceivable measure has been taken to ensure the correctness and completeness of this documentation. However, as errors can never be fully excluded we would appreciate any information or ideas at any time.

We expressly point out that the software and hardware designations and brand names of individual companies used in this user manual are subject to general trade name, trade mark or patent protection.

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1 Important Comments

To ensure fast installation and start-up of the units described in this manual, we strongly recommend that the following information and explanations are carefully read and abided by.

1.1.1 Copyright

This manual is copyrighted, together with all figures and illustrations contained therein. Any use of this manual which infringes the copyright provisions stipulated herein, is not permitted. Reproduction, translation and electronic and photo-technical archiving and amendments require the written consent of WAGO Kontakttechnik GmbH. Non-observance will entail the right of claims for damages.

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1.1.2 Personnel Qualification

The use of the product detailed in this manual is exclusively geared to specialists having qualifications in PLC programming, electrical specialists or persons instructed by electrical specialists who are also familiar with the valid standards. WAGO Kontakttechnik GmbH declines all liability resulting from improper action and damage to WAGO products and third party products due to non-observance of the information contained in this manual.

1.1.3 Intended Use

For each individual application, the components supplied are to work with a dedicated hardware and software configuration. Modifications are only permitted within the framework of the possibilities documented in the manuals. All other changes to the hardware and/or software and the non-conforming use of the components entail the exclusion of liability on part of WAGO Kontakttechnik GmbH.

Please direct any requirements pertaining to a modified and/or new hardware or software configuration directly to WAGO Kontakttechnik GmbH.

1.2 Symbols



Danger

Always abide by this information to protect persons from injury.



Warning

Always abide by this information to prevent damage to the device.



Attention

Marginal conditions must always be observed to ensure smooth operation.



ESD (Electrostatic Discharge)

Warning of damage to the components by electrostatic discharge. Observe the precautionary measure for handling components at risk.



Note

Routines or advice for efficient use of the device and software optimization.



More information

References on additional literature, manuals, data sheets and INTERNET pages

1.3 Font Conventions

<i>Italic</i>	Names of path and files are marked italic i.e.: <i>C:\programs\WAGO-IO-CHECK</i>
<i>Italic</i>	Menu items are marked as bold italic i.e.: <i>Save</i>
\	A backslash between two names marks a sequence of menu items i.e.: <i>File\New</i>
END	Press buttons are marked as bold with small capitals i.e.: ENTER
< >	Keys are marked bold within angle brackets i.e.: <F5>
Courier	Program code is printed with the font Courier. i.e.: END_VAR

1.4 Number Notation

Number Code	Example	Note
Decimal	100	normal notation
Hexadecimal	0x64	C notation
Binary	'100' '0110.0100'	Within ' Nibble separated with dots

1.5 Scope

This manual describes the following components:

Components
WAGO ETS3 Plugin

1.6 Abbreviations

AI	Analog Input
AO	Analog Output
DI	Digital Input
DO	Digital Output
I/O	Input/Output

2 General

2.1 System Configuration

The same conditions apply as to the ETS3.0f.

Minimal system requirement:

PC	Min. 1 Ghz processor capacity
Operating System	Windows 98, Windows 2000, Windows XP (XP recommended)
Main memory	256 MB
Fixed disk storage	3 GB
Monitor	Super VGA or higher
Resolution	1024x768
Mouse	recommended
Drive	-
Interface	USB, serial, KNXnet/IP controller 750-849 as router, KNXnet/IP
Others	The plugin requires the ETS version 3.0f or higher.

2.2 The ETS3

The ETS (Engineering Tool Software) was developed specifically for the planning, project design, and setup of KNX/EIB networks. The ETS has been optimized with the current version 3.0d – providing user friendly tools for the creation, maintenance, service, expansion etc. of KNX networks.

The software integrates all major components of the network, such as, lines, devices, building areas, etc. into one package that can be operated intuitively where controls and behavior of the devices can be easily planned and changed. In addition, the software tool permits the programming and configuration of individual devices within the bus system, resulting in quick and easy changes.

Using certified standards, manufacturers in the building automation industry are able to integrate their devices into the product database of the ETS due to the manufacturer-neutral design. This manual describes such devices supplied by WAGO Kontakttechnik GmbH & Co.KG.



Further information

Additional information to the ETS can be found on the manufacturer website <http://www.konnex.org>.

2.3 The WAGO ETS3 Plugin

The WAGO ETS3 PlugIn shown below represents an expansion of the ETS3 product database, for the application of WAGO products such as the KNX/EIB/TP1 module 753-646, the KNX IP controller 750-849 and the KNXnet/IP Router (consisting of KNX module and KNX IP controller). The PlugIn acts as a kind of control software providing the ETS3 access to the new options of the WAGO devices and enabling their configuration.

The software has been designed with a similar look and feel for experienced ETS users as well as structured and intuitive navigation for beginners.

An important feature of the KNX/EIB/TP1 module or controller software is the 1:1 mapping of WAGO network variables to communication objects in the ETS. At the first assignment of a group address, the communication object is displayed within the ETS3. When the objects are unlinked, they will be hidden in the ETS.

Communication objects receive the same name as the network variable to which they are mapped. This means that the internal mapping of the WAGO software is visible in the ETS as well.

2.3.1 Access to KNX Devices via ETS



Attention

The ETS version 3.0d (in the following just "ETS3") will be required.

For accessing KNX devices within a bus system via ETS3, the following options are available in ETS3:

- Serial, using the COM interface, e.g., PEI 10
- Via USB
- Via ETHERNET (KNXnet/IP)

For the connection to the bus via KNXnet/IP router, couplers are required (performing the conversion to KNX twisted-pair).

The PC used for the project design and loaded with the ETS3, must be connected to a KNX interface. The interface can then be configured in the Extras / Options / Communication menu in the ETS3. This procedure applies to all selected connection types. More information can be found in the Help menu of the ETS3.

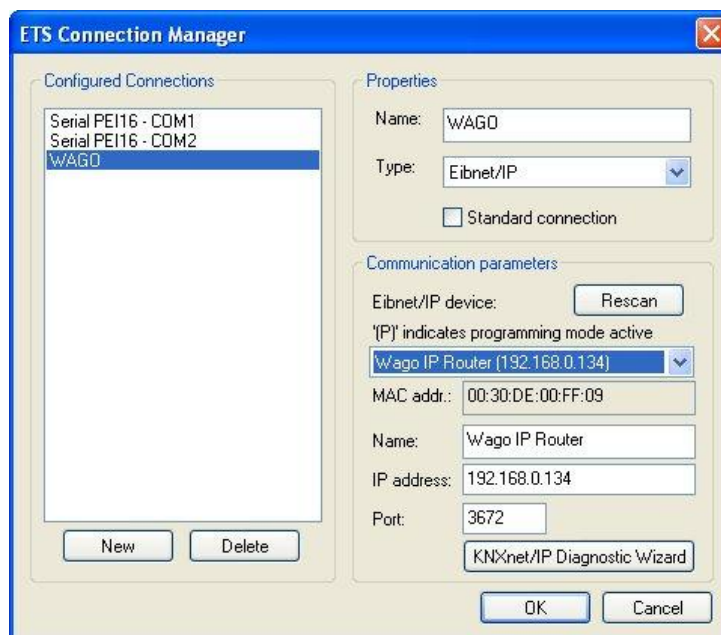


Fig. 2-1: ETS Connection Manager

If the KNX IP controller functions as KNXnet/IP router, it can be connected directly to a standard ETHERNET interface of the PC using a RJ45 cable.

From a technical point of view, ETHERNET is routed to twisted-pair and twisted-pair is routed to ETHERNET, using the KNX IP controller 750-849 and the KNX/EIB/TP1 modules (see chapter 4).

2.3.2 Data Point Types (DPTs)

DPTs describe defined formats of communication objects and are assigned to the same via ETS3. The following table provides an overview of the DPTs and their data structure.

DPT 1 – Boolean

Format: 1 bit

Range: $V=\{0.1\}$

Tab. 2-1: DPT 1 – Boolean

Subtype:		Description: 0 1		Use:
1,001	DPT_Switch	off	on	general
1,002	DPT_Bool	false	true	
1,003	DPT_Enable	disable	enable	
1,004	DPT_Ramp	no ramp	ramp	only in function block (FB)
1,005	DPT_Alarm	no alarm	alarm	
1,006	DPT_BinaryValue	low	high	
1,007	DPT_Step	degrease	increase	general
1,008	DPT_UpDown	up	down	
1,009	DPT_OpenClose	open	close	
1,010	DPT_Start	stop	start	in FB only
1,011	DPT_State	inactive	active	
1,012	DPT_Invert	not inverted	inverted	
1,013	DPT_DimSendStyle	start/stop	cyclically	
1,014	DPT_InputSource	fixed	calculated	

DPT 2 – 1 Bit Controlled

Format: 2 bit

Range: $C=\{0.1\}$ 0 = no control, 1 = control
 $V=\{0.1\}$ as DPT 1.xxx

Tab. 2-2: DPT 2 – 1 Bit Controlled

Subtype:		Coding: C V			Use:															
2,001	DPT_Switch_Control	<table><tr><th>C</th><th>V</th><th></th></tr><tr><td>0</td><td>0</td><td>no control</td></tr><tr><td>0</td><td>1</td><td>no control</td></tr><tr><td>1</td><td>0</td><td>control, function value 0</td></tr><tr><td>1</td><td>1</td><td>control, function value 1</td></tr></table>			C	V		0	0	no control	0	1	no control	1	0	control, function value 0	1	1	control, function value 1	general
C	V																			
0	0				no control															
0	1				no control															
1	0				control, function value 0															
1	1				control, function value 1															
2,002	DPT_Bool_Control				in FB only															
2,003	DPT_Enable_Control																			
2,004	DPT_Ramp_Control																			
2,005	DPT_Alarm_Control																			
2,006	DPT_BinaryValue_Control																			
2,007	DPT_Step_Control																			
2,008	DPT_Direction1_Control																			
2,009	DPT_Direction2_Control																			
2,010	DPT_Start_Control																			
2,011	DPT_State_Control																			
2,012	DPT_Invert_Control																			

DPT 3 – 3 Bit Controlled

Format: 4 bit
Range: C = {0,1}, V = {see Coding}

Tab. 2-3: DPT 3 – 3 Bit Controlled

Subtype:		Coding: C VVV		Use:							
3,007	DPT_Control_Dimming	as1,007	Range[000b...111b] 001b...111b:Step, 000b:Break	in FB only							
3,008	DPT_Control_Blinds	as1,008									
3,009	DPT_Mode_Boiler	as1,014	Range: {001,010,100} <table><tr><th>VVV</th><th>Active Mode</th></tr><tr><td>001</td><td>Mode 0</td></tr><tr><td>010</td><td>Mode1</td></tr><tr><td>100</td><td>Mode2</td></tr></table>		VVV	Active Mode	001	Mode 0	010	Mode1	100
VVV	Active Mode										
001	Mode 0										
010	Mode1										
100	Mode2										

DPT 4 – Character Set

Format: 8 bit
Coding: see Table

Tab. 2-4: DPT 4 – Character Set

Subtype:		Range:	Use:
4,001	DPT_Char_ASCII	[0...127]	general
4,002	DPT_Char_8859_1	[0...255]	

AAAA	AAAA	LSN = Least Significant Nibble
MSN	LSN	

MSN	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LSN																
0	NUL	DLE		0	@	P	`	p				°	À	Ð	à	ð
1	SOH	DC1	!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
2	STX	DC2	“	2	B	R	b	r			¢	²	Â	Ó	â	ò
3	ETX	DC3	#	3	C	S	c	s			£	³	Ã	Ô	ã	ó
4	EOT	DC4	\$	4	D	T	d	t			¤	´	Ä	Õ	ä	ô
5	ENQ	NAK	%	5	E	V	e	u			¥	µ	Å	Ö	å	ö
6	ACK	SYN	&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7	BEL	ETB	‘	7	G	W	g	w			§	·	Ç	×	ç	÷
8	BS	CAN	(	8	H	X	h	x			”	¸	È	Ø	è	ø
9	HT	EM	)	9	I	Y	i	y			©	¹	É	Ù	é	ù
A	LF	SUB	*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
B	VT	ESC	+	;	K	[	k	{			«	»	Ë	Û	ë	û
C	FF	FS	,	<	L	\	l				¬	¼	Ì	Ü	ì	ü
D	CR	GS	-	=	M	]	m	}			-	½	Í	Ý	í	ý
E	SO	RS	.	>	N	^	n	~			®	¾	Î	Þ	î	þ
F	SI	US	/	?	O	_	o				™	¿	Ï	ß	ï	ÿ

DPT 5 – 8 Bit Unsigned Value

Format: 8 bit

Range: U = [0...255] Binary Encoded

Tab. 2-5: DPT 5 – 8 Bit Unsigned Value

Subtype:		Range (from ... to):	Unit:	Coding:	Use:
5,001	DPT_Scaling	[0...100]	%	lsb msb	general
5,003	DPT_Angle	[0...360]	°	UUUUUUUU	general
5,004	DPT_Percent_U8	[0..255]	%	00000000 = range min./off 00000001 = value "low" ... 11111111 = range max.	in FB only
5,010	DPT_Value_1_Ucount	[0...255]	Counter value	binary	general

DPT 6 – 8 Bit Signed Value

Format: 8 bit

Range: -128...+127

Tab. 2-6: DPT 6 – 8 Bit Signed Value

Subtype:		Unit min ... max:	Use:
6,010	DPT_Value_1_Count	Counter value	general

DPT 6 – Status with Mode

Format: 8 bit

Range: A, B, C, D, E = (0.1) FFF = (001b, 010b, 100b)

Tab. 2-7: DPT 6 – Status with Mode

Subtype:		Coding:	Use:
6,020	DPT_Status_Mode3	A, B, C, D, E 0 = set 1 = clear FFF 001 _b = mode 0 = active 010 _b = mode 1 = active 100 _b = mode 2 = active	in FB only

DPT 7 – 2 Octet Unsigned Value

Format: 2 octet (2 Byte)

Range: U = [0..65535]

Tab. 2-8: DPT 7 – 2 Octet Unsigned Value

Subtype:		Unit:	Coding:	Use:
7,001	DPT_Value_2_Ucount	Counter value	binary	general
7,010	DPT_PropDataType	No unit	binary	in FB only

DPT 7 – Time Period

Format: 2 octet (2 Byte)
Range: see Table

Tab. 2-9: DPT 7 – 2 Octet Unsigned Value

Subtype:		Range (from ... to):	Unit:	Coding:	Use:
7.002	DPT_TimePeriodMsec	0 ... 65535	ms	binary	general
7.003	DPT_TimePeriod10Msec	0 ... 655,35	s		
7.004	DPT_TimePeriod10Msec	0 ... 6 553,5	s		
7.005	DPT_TimePeriodSec	0 ... 65 535	s		
7.006	DPT_TimePeriodMin	0 ... 65 535	min		
7.007	DPT_TimePeriodHrs	0 ... 65 535	h		

DPT 8 – 2 Octet Signed Value

Format: 2 octet (2 Byte)
Range: -32768...+32767

Tab. 2-10: DPT 8 – 2 Octet Signed Value

Subtype:		Unit:	Coding:	Use:
8,010	2 byte signed value	Counter value	Two's complement	general

DPT 9 – 2 Octet Float Value

Format: 2 octet (2 Byte)
Range: -671088.64...+670760.96

Tab. 2-11: DPT 9 – 2 Octet Float Value

Subtype:		Range:	Unit:	Use:
9,001	DPT_Value_Temp	-273...+670760	°C	general
9,002	DPT_Value_Tempd	-670760...+670760	K	
9,003	DPT_Value_Tempa	-670760...+670760	K/h	
9,004	DPT_Value_Lux	0...670760	Lux	
9,005	DPT_Value_Wsp	0..670760	m/s	
9,006	DPT_Value_Pres	-670760...+670760	Pa	
9,010	DPT_Value_Time1	-670760...+670760	s	
9,011	DPT_Value_Time2	-670760...+670760	ms	
9,020	DPT_Value_Volt	-670760...+670760	mV	
9,021	DPT_Value_Curr	-670760...+670760	mA	

DPT 10 – Time

Format: 3 octet (3 Byte) for day, hour, minute, second

Range: see Table

Tab. 2-12: DPT 10 – Time

Subtype:		Range:	Unit:		Coding:	Use:
10,00	DPT_TimeOfDay	[0 - 7] 3 Bit	days	d	0 = no day 1 = Monday 2 = Tuesday ... 7 = Sunday	general
		[0 - 23] 4 bit	hours	h	binary	
		[0 - 59] 6 bit	minutes	m		
		[0 - 59] 6 bit	seconds	s		

DPT 11 – Date

Format: 3 octet (3 Byte) for day, month, year

Range: see Table

Tab. 2-13: DPT 11 – Date

Subtype:		Range:	Unit:	Coding:	Use:
11,00	DPT_Date	[1 - 31]	day	D	general
		[1-12]	month	M	
		[0 - 99]	year	Y	

DPT 12 – 4 Octet Unsigned Value

Format: 4 octet (4 Byte)

Range: see Table

Tab. 2-14: DPT 12 – 4 Octet Unsigned Value

Subtype:		Range:	Unit:	Coding:	Use:
12,00	DPT_Value_4_Ucount	0..4294967295	without unit	binary	general

DPT 13 – 4 Octet Signed Value

Tab. 2-15: DPT 12 – 4 Octet Unsigned Value

Subtype:		Range:	Unit:	Coding:	Use:
13,001	DPT_Value_4_Count	-2147483648 ...+2147483647	without unit	Two's complement	general

DPT 14 – 4 Octet Float Value

Format: 4 octet (4 Byte)
Range: $S = \{0,1\}$, $e = [0..255]$, $f = [0..8388607]$ Seeeeeeee effffff fffffff fffffff
Coding: as per IEEE 754
Use: general

Tab. 2-16: DPT 14 – 4 Octet Float Value

Subtype:		Unit:	Description:
14,000	DPT_Value_Acceleration	m s ⁻²	linear acceleration
14,001	DPT_Value_Acceleration_Angular	rad s ⁻²	angular acceleration
14,002	DPT_Value_Activation_Energy	J mol ⁻¹	activation energy
14,003	DPT_Value_Activity	s ⁻¹	radioactive energy
14,004	DPT_Value_Mol	mol	substance amount
14,005	DPT_Value_Amplitude	-	amplitude
14,006	DPT_Value_AngleRad	rad	angle radiant
14,007	DPT_Value_AngleDeg	°	angle degree
14,008	DPT_Value_Angular_Momentum	js	angular momentum
14,009	DPT_Value_Angular_Velocity	rad s ⁻¹	angular velocity
14,010	DPT_Value_Area	m ²	area
14,011	DPT_Value_Capacitance	F	capacitance
14,012	DPT_Value_Charge_DensitySurface	C m ⁻²	charge density (surface)
14,013	DPT_Value_Charge_DensityVolume	C m ⁻³	charge density (volume)
14,014	DPT_Value_Compressibility	m ² N ⁻¹	compressibility
14,015	DPT_Value_Conductance	S=Ω ⁻¹	conductance
14,016	DPT_Value_Electrical_Conductivity	S m ⁻¹	electrical conductivity
14,017	DPT_Value_Density	kg m ⁻³	density
14,018	DPT_Value_Electric_Charge	C	electric charge
14,019	DPT_Value_Electric_Current	A	current
14,020	DPT_Value_Electric_CurrentDensity	A m ⁻²	electric current density
14,021	DPT_Value_Electric_DipoleMoment	C m	electric dipole moment
14,022	DPT_Value_Electric_Displacement	C m ⁻²	electric displacement
14,023	DPT_Value_Electric_FieldStrength	V m ⁻¹	electric field strength
14,024	DPT_Value_Electric_Flux	c	electric flux
14,025	DPT_Value_Electric_FluxDensity	C m ⁻²	electric flux density
14,026	DPT_Value_Electric_Polarization	C m ⁻²	electric polarization
14,027	DPT_Value_Electric_Potential	V	electric potential
14,028	DPT_Value_Electric_PotentialDifference	V	electric potential difference
14,029	DPT_Value_Electromagnetic_Moment	A m ²	electromagnetic moment
14,030	DPT_Value_Electromotive_Force	V	electromagnetic force
14,031	DPT_Value_Energy	J	energy
14,032	DPT_Value_Force	N	force
14,033	DPT_Value_Frequency	Hz	frequency
14,034	DPT_Value_Angular_Frequency	rad s ⁻¹	angular frequency
14,035	DPT_Value_Heat_Capacity	J K ⁻¹	heat capacity
14,036	DPT_Value_Heat_FlowRate	W	heat flow rate
14,037	DPT_Value_Heat_Quantity	J	heat quantity
14,038	DPT_Value_Impedance	Ω	impedance
14,039	DPT_Value_Length	m	length
14,040	DPT_Value_Light_Quantity	lm s	light quantity
14,041	DPT_Value_Luminance	cd m ⁻²	luminance
14,042	DPT_Value_Luminous_Flux	lm	luminous flux
14,043	DPT_Value_Luminous_Intensity	cd	luminous intensity
14,044	DPT_Value_Magnetic_FieldStrength	A m ⁻²	magnetic field strength
14,045	DPT_Value_Magnetic_Flux	Wb	magnetic flux
14,046	DPT_Value_Magnetic_FluxDensity	T	magnetic flux density
14,047	DPT_Value_Magnetic_Moment	A m ²	magnetic moment

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Data Point Types (DPTs)

14,048	DPT_Value_Magnetic_Polarization	T	magnetic polarization
14,049	DPT_Value_Magnetization	A m ⁻¹	magnetization
14,050	DPT_Value_MagnetomotiveForce	A	magnetomotive force
14,051	DPT_Value_Mass	kg	common (ground)
14,052	DPT_Value_MassFlux	kg s ⁻¹	mass flux
14,053	DPT_Value_Momentum	N s-1	momentum
14,054	DPT_Value_Phase_AngleRad	rad	phase angle radiant
14,055	DPT_Value_Phase_AngleDeg	°	phase angle degree
14,056	DPT_Value_Power	W	power
14,057	DPT_Value_Power_Factor	cos φ	power factor
14,058	DPT_Value_Pressure	Pa	Atmospheric pressure
14,059	DPT_Value_Reactance	Ω	reactive impedance
14,060	DPT_Value_Resistance	Ω	resistance
14,061	DPT_Value_Resistivity	Ωm	specific resistance
14,062	DPT_Value_SelfInductance	H	selfinduction
14,063	DPT_Value_SolidAngle	sr	solid angle
14,064	DPT_Value_Sound_Intensity	W m-2	sound intensity
14,065	DPT_Value_Speed	m s-1	speed
14,066	DPT_Value_Stress	Pa = Nm ⁻²	mechanical stress
14,067	DPT_Value_Surface_Tension surface	N m ⁻¹	surface tension
14,068	DPT_Value_Common_Temperature	°C	temperature Celsius
14,069	DPT_Value_Absolute_Temperature	K	temperature Kelvin
14,070	DPT_Value_TemperatureDifference	K	temperature difference
14,071	DPT_Value_Thermal_Capacity	J K ⁻¹	heat capacity
14,072	DPT_Value_Thermal_Conductivity	W m ⁻¹ K ⁻¹	thermal conductivity
14,073	DPT_Value_ThermoelectricPower	V K ⁻¹	thermo-electric power
14,074	DPT_Value_Time	s	time
14,075	DPT_Value_Torque	Nm	torque
14,076	DPT_Value_Volume	m ³	volume
14,077	DPT_Value_Volume_Flux	m ³ s ⁻¹	volume flux
14,078	DPT_Value_Weight	N	weight
14,079	DPT_Value_Work	J	work

DPT 15 – Access

Format: 4 octet (4Byte)

Tab. 2-17: DPT 15 – Access

Subtype:		Coding:	Use:
15,000	DPT_Access_Data	[D6D6D6D6 D5D5D5D5] [D4D4D4D4 D3D3D3D3] [D2D2D2D2 D1D1D1D1] [EPDCNNN] D6D5D4D3D2D1: binary [0 to 9] N: binary [0 to 15] E, P, D, C: {0,1} D_x 24 bit access ID code, card number or key number E On error; reading failed P Permission = 0 not accepted = 1 accepted D Read Direction = 0 from left to right = 1 from right to left C access information encrypted = 0 no = 1 yes N index access ID code	general

DPT 16 –String

Format: 14 octet (14 Byte)

Coding: ASCII string

Tab. 2-18: DPT 16 – String

Subtype:		Range:	Use:
16,00	DPT_String_ASCII	same as Character String (ASCII) (1..127)4.001	general
16,00	DPT_String_8859_1	same as Character String (ISO 8859-1) (0..255)4.002	

3 KNX/EIB/TP1 Module / KNX IP Controller

The KNX/EIB/TP1 module 753-646, a.K.a. the KNX module, and the KNX IP controller 750-849 use the same ETS3 PlugIn (the controller offers additional functionality). For this reason, this description applies for both, the KNX module and the controller.

3.1 Setup of the KNX Module and the KNX IP Controller

The following chapter describes the steps required for utilizing the ETS3 PlugIn for the KNX module and the KNX IP controller (within the ETS3).

3.1.1 Importing the Application Program into the ETS3

For the import of the ETS3 PlugIn, select the corresponding vd4 file via the **FILE / IMPORT** function of the ETS3. The ETS3 product database will be updated automatically and will then contain the KNX module and/or the KNX IP controller. The following path is valid for the operation of the KNX module, as well as the controller.

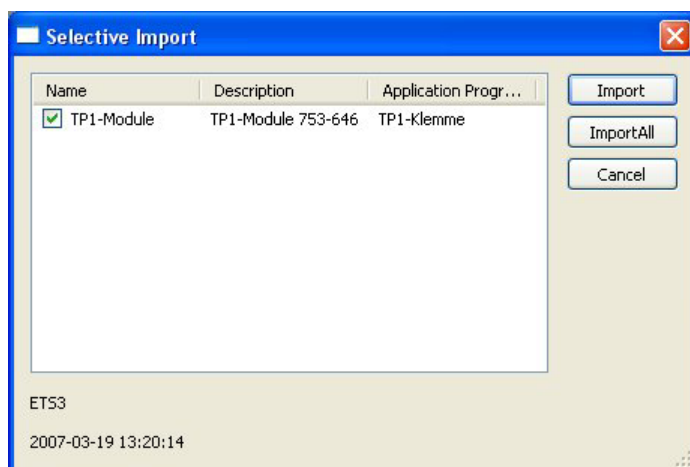


Fig. 3-1: Importing the application module

Using the **ADD DEVICE** function, the required module (KNX IP controller or KNX module) is added to the ETS3. The IP router will be discussed below. The product finder of the ETS3 opens for the selection of the KNX module.

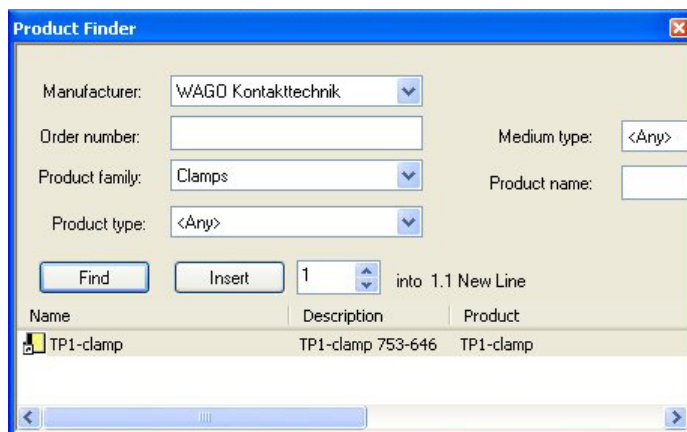


Fig. 3-2: Adding the device with product finder

During the adding process, the installation routine is started automatically, integrating the ETS3 PlugIn for the KNX module or KNX IP controller into the ETS3. The following screen appears:

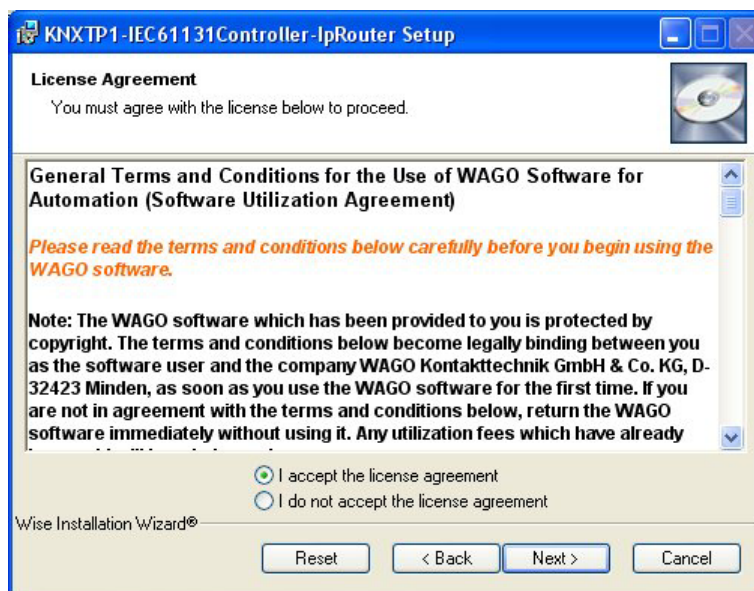


Fig. 3-3: Installation of the software, part 1

Please read the licensing agreement carefully and select "I accept the license agreement". Then confirm by clicking **NEXT**. Setup will now install the PlugIn. If you do not agree with the license agreement, setup will be cancelled by clicking the **CANCEL** button.



Note

If the ETS3 PlugIn was already installed for a KNX module, the KNX IP controller or the KNXnet/IP router, the above dialog will not appear.

3.2 Operating Elements

For configuration of the device and opening of the ETS3 PlugIn user interface, select the **EDIT PARAMETERS** function in the device context menu of the ETS3.

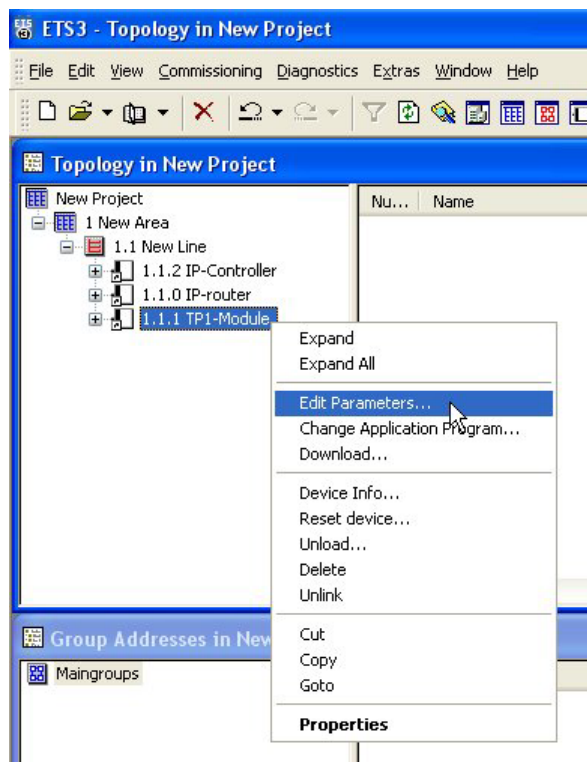


Fig. 3-4: Opening the ETS3-PlugIn

The following window appears:

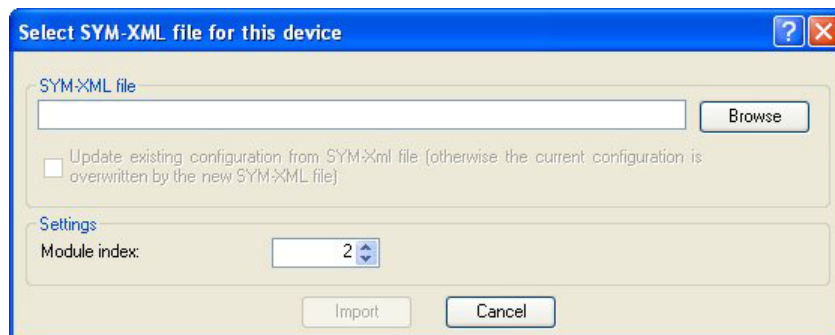


Fig. 3-5: Selecting the SYM-XML file

A SYM-XML file containing the specific configuration of the KNX module or KNX IP controller, must be selected and loaded for operation. This file is generated with the WAGO tool "WAGO-I/O-Pro CAA".

The checkbox below the SYM-XML file entry is only enabled after specifying a SYM-XML source file. If it is checked, the current device configuration will be synchronized with the parameters specified in the SYM-XML file. If the

box is not checked, the device configuration will be overwritten with the data in the SYM-XML file. It is recommended to regularly save the respective configurations (see chapter 3.2.2.1.1) and to activate the auto save function (see chapter 3.2.2.3).

The module index is specified in "Settings", corresponding to the position in the hardware configuration. The first module in the node starts with Index 1.



Note

If a second KNX module is used on a KNX IP controller 750-849, the module will operate in device mode. The first KNX module is automatically set to router mode. Although the first module cannot be accessed via the IEC application (WAGO-I/O-PRO CAA), the subsequent second KNX module is addressed via index 2 (see also the manual of the KNX IP controller 750-849).



Note

It is not possible to configure several KNX modules simultaneously. The selected module index influences the naming of the network variables (see chapter 3.2.5).

If the correct file name including path is not displayed in the "SYM-XML file" field, the "Open file" dialog is activated by clicking on **SEARCH**, for a selection of the correct SYM-XML file.

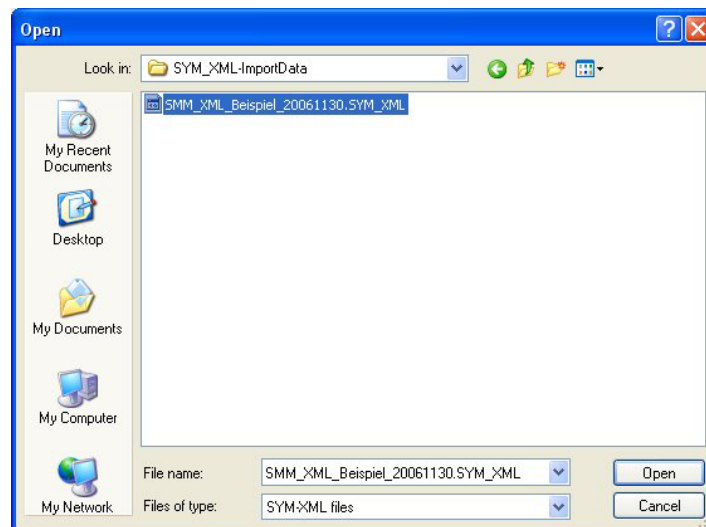


Fig. 3-6: Selecting the SYM-XML file

Upon successful conclusion of the SYM-XML file import, the graphical user interface of the KNX module, as specified in the module index, appears.

3.2.1 The Graphical User Interface

The graphical user interface clearly displays all relevant data regarding the configuration of the KNX module. The main window is divided into the following sections:

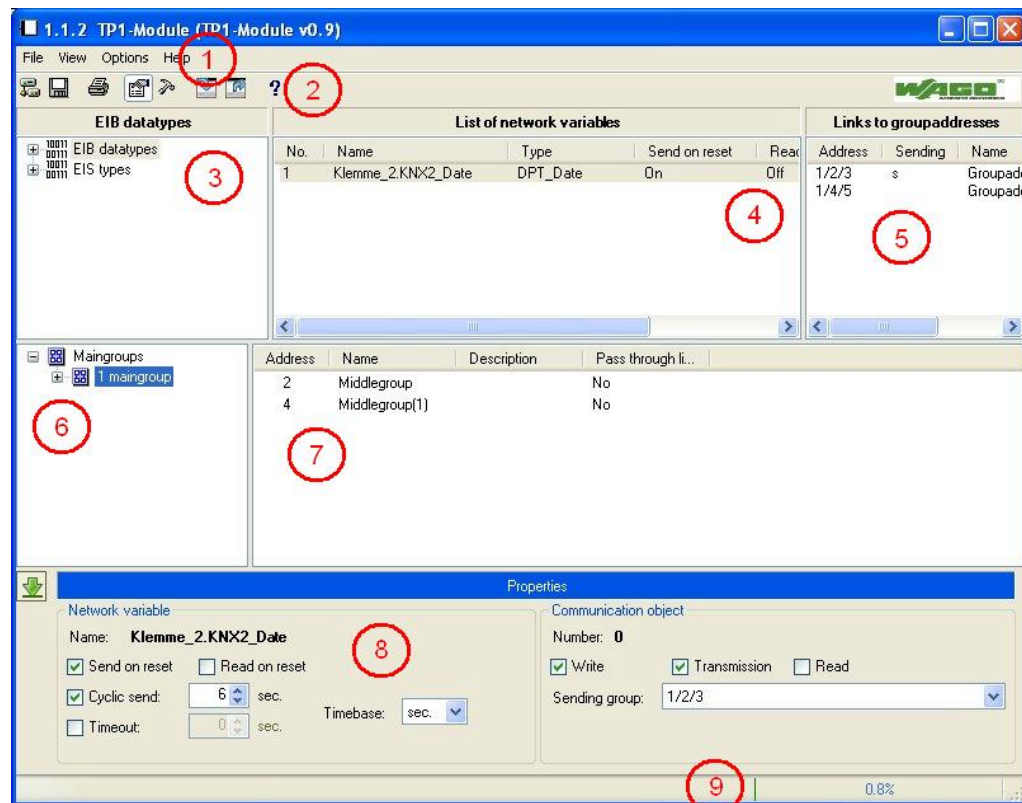


Fig. 3-7: Overview ETS3 PlugIn

Legend:

- 1 Main menu (see chapter 3.2.2)
- 2 Toolbar (see chapter 3.2.3)
- 3 KNX data types (see chapter 3.2.4)
- 4 Network variables (see chapter 3.2.5)
- 5 Association with group addresses (see chapter 3.2.6)
- 6 Available group addresses (see chapter 3.2.7)
- 7 Properties of the selected group (see chapter 3.2.8)
- 8 Property window (see chapter 3.3.3)
- 9 Percentage bar (see chapter 3.2.10)

This display structure cannot be changed, although the property window may be hidden or displayed. Also, using the mouse cursor, the individual window panes can be dragged to the desired height and width.

3.2.2 Main Menu

The menu navigation of the PlugIn is designed as follows:

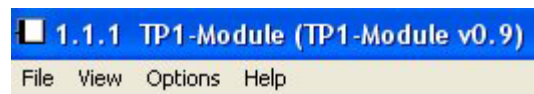
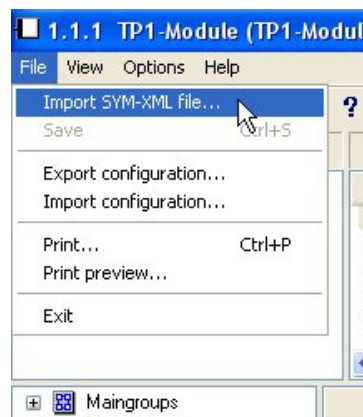


Fig. 3-8: Main menu

The items "File", "View" and "Help" are shown below.

3.2.2.1 Menu Item "File"



File. 3-9: Menu item "File"

Import SYM-XML file...

Imports one SYM-XML file, similar to 3.2, "Selecting the SYM-XML file"

Save

Saves the settings to the database of the ETS3. The basic changes made via the ETS3 PlugIn (e.g. creating new groups) will be stored in the ETS3. These settings are primarily relevant for the ETS3. The menu item is first activated when changes are being performed.

Export configuration...

Exports the current configuration as XML file (no SYM-XML file). All settings of WAGO devices (assignment of network variables, their properties, the settings of network variables and the assignment of communication objects to group addresses, etc.) will be saved as XML file. This file is used as backup or as template for the ETS3 PlugIn. When importing this file, the predefined settings are stored in the devices and current settings will eventually be replaced.

Import configuration...

Imports one configuration as XML file. This is not a SYM-XML file.

Print...

Prints the current configuration. Two options are available:

Based on group addresses (excerpt):

Project details:

Project: New Project
Projectnumber:
Completionstatus: Unknown
Devicename: TP1-Module
Individual address: 1.1.2
Print date: 3/22/2007 12:35:18 PM

Module index: 1

Group addresses:

1. 0/0/1

1. Klemm1_1.Enable2

2. Klemm1_1.Enable3

Uses this group address for sending

3. Klemm1_1.Enable4

Fig. 3-10: Printout based on GA, shown for the KNX module

Based on network variables (excerpt):

Project details:

Project:	New Project
Projectnumber:	
Completionstatus:	Unknown
Devicename:	TP1-Module
Individual address:	1.1.2
Print date:	3/20/2007 5:08:11 PM
Module index:	1

Network variables:

1. Klemm1_1.Access

Properties:

CO number:	not assigned to CO
Send on reset:	disabled
Read on reset:	disabled
Timeout:	off
Cyclic send:	off
Assigned group addresses:	

Fig. 3-11: Printout based on network variables, shown for the KNX module

Print preview...

Displays a print preview. The same two view options as for Print are available.

End...

Ends the PlugIn. If the modifications have not been saved, the software will return a prompt with the option to save the changes.

3.2.2.1.1 Exporting a Configuration File

Upon selection of "Export configuration", a dialog appears requesting the input of a freely selectable storage location. Clicking the left mouse button executes the save command and closes the dialog.



Note

It is recommended to regularly export the configuration.

3.2.2.1.2 Importing a Configuration File

Upon selection of "Import configuration", a dialog appears for the navigation to an existing configuration file. Clicking the left mouse button on **OPEN** executes the import command and closes the dialog.



Note

The export or import function provides for the recovery of previous settings after a new installation of the ETS3, or to load them to another PC.

3.2.2.2 Menu Item "View"

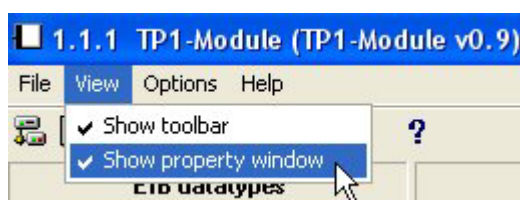


Fig. 3-12: Menu item "View"

Show Toolbar

When activated, the toolbar is displayed. Otherwise, it will be hidden otherwise.

Show Property window

When activated, the property window will be displayed. Otherwise, it will be hidden otherwise.

3.2.2.3 Menu Item "Options"

The Options dialog provides the possibility to set automatic saving of the current configuration. For this, the "Activate automatic saving the configuration" checkbox must be activated. Then, a number can be entered, specifying the saving interval in minutes. Unlike the "Export configuration..." function, XML files are not saved, but the behavior of the auto-save function corresponds to the standard "Save" function and saves the changes to the ETS3 database.

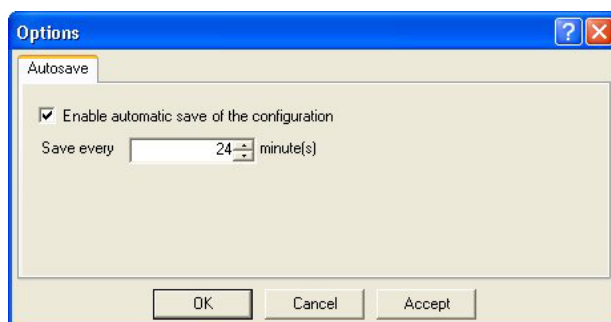


Fig. 3-13: Menu item "Options"

3.2.2.4 Menu Item "Help"

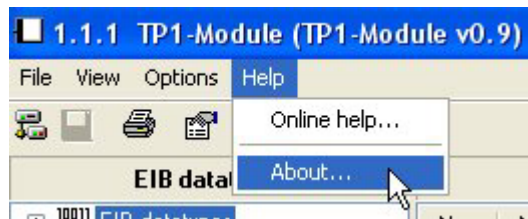


Fig. 3-14: Menu item "Help"

Online help...	Activates the online help
About...	Displays information on the PlugIn

3.2.2.5 System Menu

The Windows system menu contains the following commands:

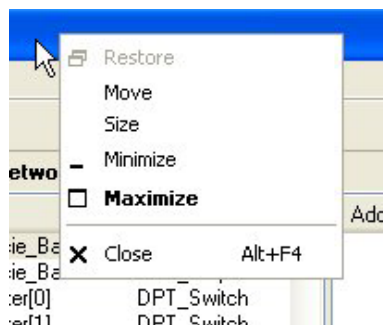


Fig. 3-15: System menu

Restore	Displays the active window in its original dimensions.
Move	The active window is moved on the screen.
Size	The dimensions of the active window are changed.
Minimize	The active window is displayed as an icon.
Maximize	The active window is shown in full monitor size.
Close	The active window is closed.

3.2.3 Toolbar

The toolbar provides a fast and convenient access to the most common functions of the main menu.

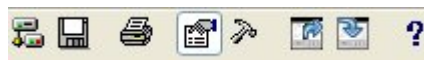


Fig. 3-16: Toolbar

Button	Action
	Imports a SYM-XML file, similar to 3.2, "Selecting the SYM_XML file"
	Saves the settings to the ETS3. The SYM-XML file is not changed.
	Prints the current configuration.
	Hides/shows the property window.
	Opens the Options menu
	Exports the current configuration as XML file (not SYM-XML).
	Imports a configuration (not SYM-XML file).
	Opens the online help.

3.2.4 KNX Data Types

In the upper left corner of the screen, the window of EIB data types and EIS types is displayed (see Fig. 3-7: Overview ETS3 PlugIn). These types represent the data point types available in the ETS. Depending on the selected data type or EIS type, only network variables corresponding to the selected type are displayed. The KNX data type window can therefore be used as a filter for the network variables.

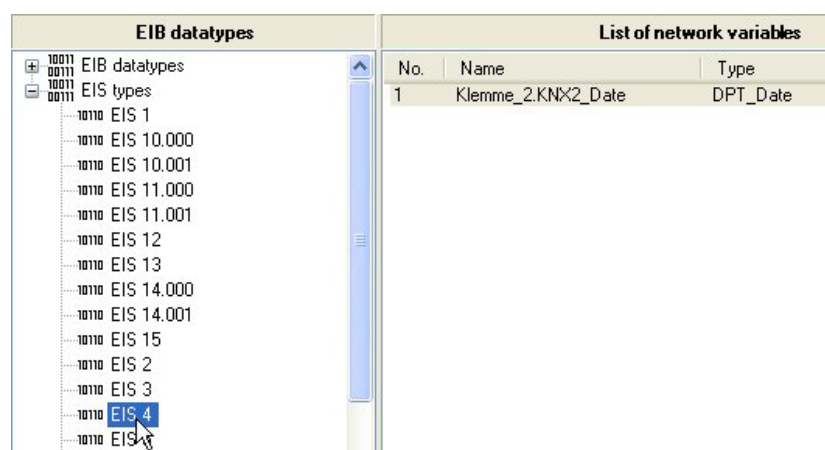


Fig. 3-17: Selecting EIS type 4 corresponding to EIB type DPT_Date

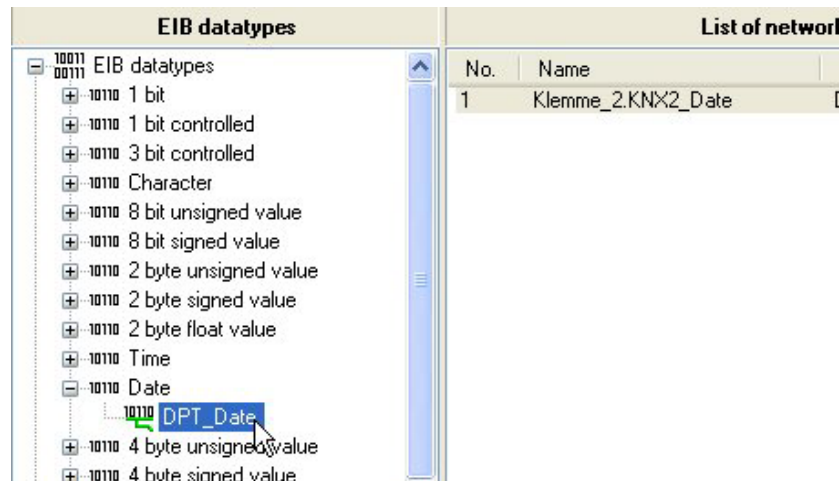


Fig. 3-18: Selecting EIB type DPT_Date corresponding to EIS type 4



Note

Only *one* data type can be specified as a filter at any given time. Multiple selection is not possible in the EIB data type window.

3.2.5 Network Variables

In the central position, the available network variables that can be linked to group address from the ETS3, are listed (see Fig. 3-7: Overview ETS3 PlugIn). These network variables have a specific data point type (e.g., DPT_Access_Data) with an equivalent in the ETS environment (e.g., "Entrance access"), or "DPT_Control_Dimming" to "3 bit controlled".

The network variables may also be filtered as EIS types; corresponding to the above example, this would be "EIS 12" for "DPT_Access_Data" and "EIS 2" for "DPT_Control_Dimming". DPTs/network variables of equal length are summarized in the display.

In addition, the list of network variables shows the current settings of the network variables, e.g., "Read after reset", etc. (see chapter 3.3.3).



Note

If the first KNX module is edited, its network variables will not receive a prefix (e.g., Name: Enable2).

If a different KNX module is edited, e.g., the third, its network variables will receive a prefix (e.g., Name: KNX3_Enable2).

3.2.6 Associations with Group Addresses

The window of the Associations with group addresses is located in the upper right section of the screen and shows which group addresses are currently associated with the network variable selected in the "List of network variables" window (see Fig. 3-7: Overview ETS3 PlugIn). In addition to the actual group address, the name of this specific address is displayed, as is the flag status. These flags are based on the ETS3, for more information please refer to the ETS3 documentation.

List of network variables				Links to groupaddresses		
No.	Name	Type	Send on reset	Address	Sending	Name
1	Klemme_2.KNX2_Date	DPT_Date	On	0/0/1	\$	Neue Gr
				0/0/2		Neue Gr
				0/0/7		Neue Gr

Fig. 3-19: Properties of selected network variables

3.2.7 Available Group Addresses

This section of the WAGO user interface displays the available group addresses in the standard ETS3 format. The tree view permits the selection of the required group address.



Note

Only *one* group address can be selected at a given time.

It is possible to add new group addresses. For this, the context menu of the superordinate intermediate group is opened using the right mouse button, and the "Add new group address" item is selected. The following dialog opens:

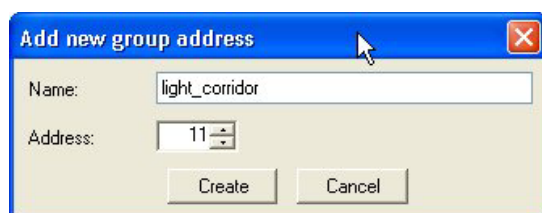


Fig. 3-20: Add new group address

The name of the group address can be freely selected. The address of the group address is combined from its main and intermediate group, and a number between 0...255, which can be set in this dialog. If the address entered has already been assigned, the ETS3 PlugIn will return a corresponding message.

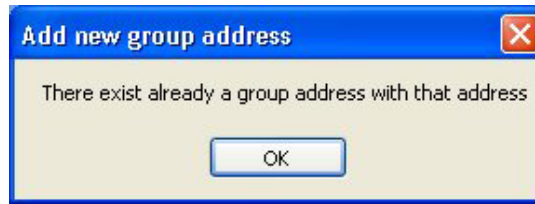


Fig. 3-21: Group address already in use

In this case, a new, unassigned number must be selected.

Similar to adding a new group address, new main and intermediate groups can also be created.

3.2.8 Properties of a Selected Group

This section of the WAGO user interface displays the network variables associated with a group address highlighted in the "Available group addresses" window. It also displays the current settings of the network variables.



Fig. 3-22: Properties of highlighted group address (excerpt)

3.2.9 Property Window

The property window displays the current properties of the network variables and permits the modification of the variables' behavior (see chapter 3.3.3 "Configuration of Network Variables/Communication Objects").

3.2.10 Percentage bar

The percentage display indicates the relative capacity of the ETS3 PlugIn based on the following limits:

- 253 communication objects for the configuration of the controller and module
- 254 group addresses for the configuration of the controller and module
- 254 associations for the configuration in the controller and module

The percentage display results from the respective amounts.

Example:

If 253 communication objects **or** 254 group addresses **or** 254 associations are available, the system is used at 100% capacity.

If 2 communication objects are linked to 127 group addresses each, this results in 254 associations, so that the system is used at 100% capacity.

No additional assignments are possible when the system is used at 100% capacity.

3.3 Function

The principal task of the software is the visualization, and editable creation, of the association of network variables from the KNX module (or the KNX IP controller) with the group addresses of the ETS3.

Network variables and group addresses can also be easily configured.

3.3.1 Creating Associations

Four options are available for the creation of a valid association network variable $\leftrightarrow$ group address. All options have the common feature of a plausibility check performed internally by the ETS3 PlugIn. Invalid association attempts are detected and reported.



Note

When a group address is associated with a network variable, only other network variables of the same type can be linked to the group address.



Fig. 3-23: Creating an association using Drag & Drop (excerpt)

3.3.1.1 Drag & Drop from the Main Group Window

For the creation of an association from the main group window (using drag & drop), click and hold the left mouse button on the required group address. Then drag the mouse cursor on the target network variable in the window

"List of network variables" and release the left mouse button. The source group address will now appear in the "Association to group addresses" window of the target network variables (see Fig. 3-7: Overview ETS3 PlugIn).

3.3.1.2 Drag & Drop from the Network Variables Window

For the creation of an association from the network variables window via drag & drop, click and hold the left mouse button on the required network variable in the "List of network variables" window. Then drag the mouse cursor to the target group address (in the group address window) and release the left mouse button. The target group address will appear in the "Association to group address" window of the source network variables. (see Fig. 3-7: Overview ETS3 PlugIn).

3.3.1.3 Group Address Context Menu

Upon selection of the context menu of a group address and an activation of the "Associate with network variable ..." entry, a table with all available network variables of the project appears.

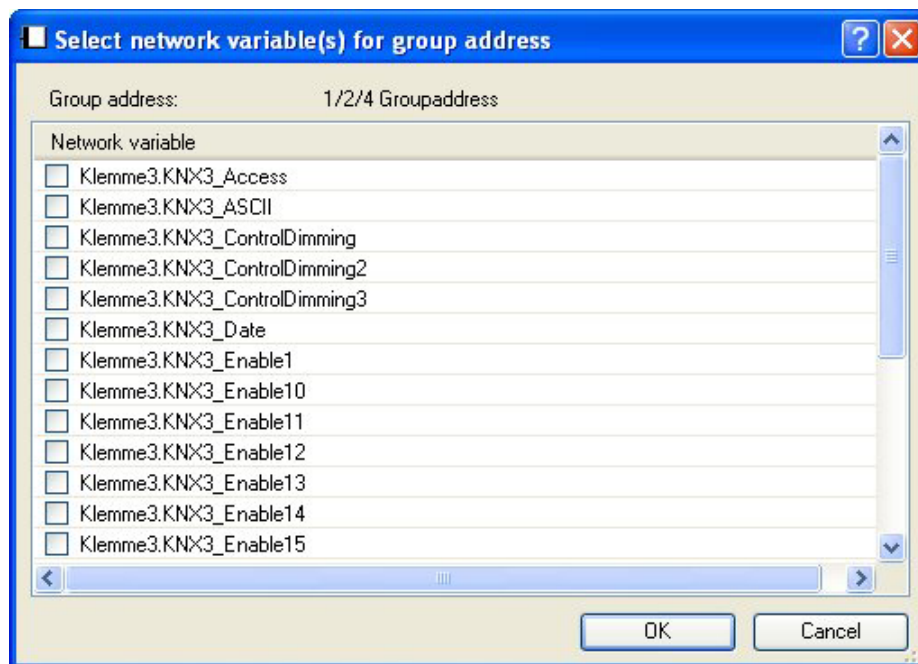


Fig. 3-24: Creating associations with several network variables

As soon as a network variable is selected, the dialog is redrawn and displays only those network variables matching those already selected if available. In the example shown, one of the "Enable" network variables was selected, resulting in a dialog displaying only the network variables matching the DPT.

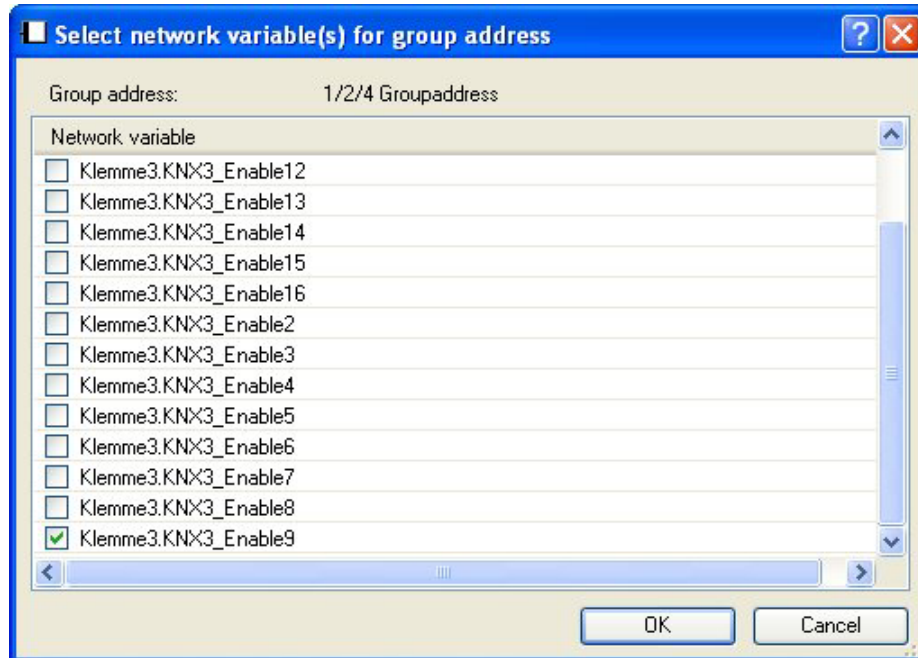


Fig. 3-25: Example for the automatic filtering when selecting a network variable



Note

Only those network variables are shown, whose type matches the current group address.

In this list, one or multiple network variables can be selected. Closing the dialog with **OK** generates the selected associations. If **CANCEL** is selected, the changes are discarded. The target network variable or variables appear(s) in the "Properties of the selected group" window (see Fig. 3-7: Overview ETS3 PlugIn).

3.3.1.4 Network Variables Context Menu

Upon selection of the context menu of a network variable and activation of the "Associate with group address..." entry, a new "Associate network variable" dialog appears. This dialog permits the selection of a required target group address from a list of current group addresses and the creation of an association, or the direct creation of a new group address which will immediately be associated with the network variable.



Fig. 3-26: "Associate network variable" dialog

The target group address appears in the "Associations with group addresses" window of the source network variables (see Fig. 3-7: Overview ETS3 PlugIn).



Note

If the address of a group address already present in the system is entered when the "New group address" option is selected, an association is created with the already existing group address. A new group address will not be created.

3.3.1.5 Error messages

Assignment errors occurring for simple connections between a group address and a network variable are displayed via the status bar.

Errors occurring for multiple assignments of group addresses to network variables are displayed as popup windows including the lists of group addresses used and showing possible causes of errors.

3.3.2 Deleting Associations

There are two options to remove an association network variable <> group address.

When a group address is selected in the group address window, the corresponding network variables are displayed in the "Properties of the selected group" window. The association can be removed by highlighting it with a left mouse click and a subsequent click on the "REMOVE" button.

Alternatively, the association can be removed by opening the association's context menu and clicking on the "Unlink network variable" or "Unlink group address" entry.

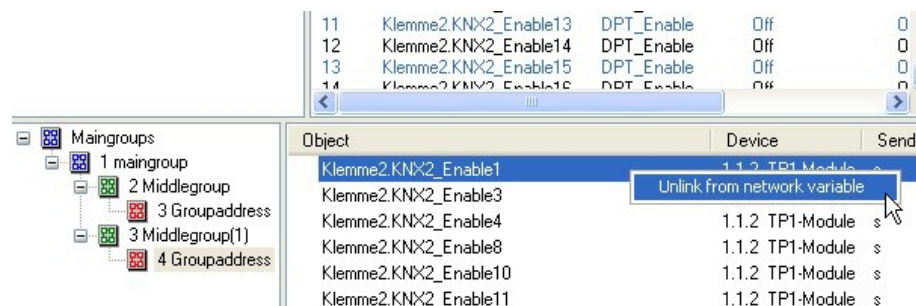


Fig. 3-27: Unlinking a network variable using the context menu (excerpt)

All deletion processes will display a security prompt prior to the final deletion, permitting cancellation of the action.

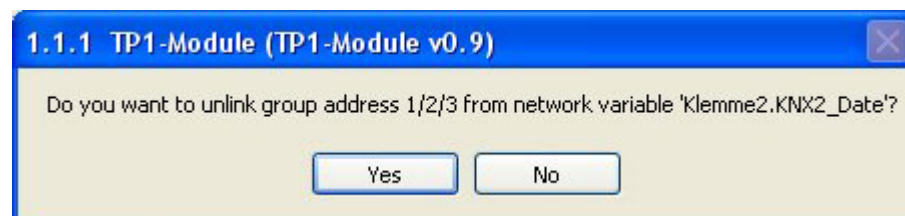


Fig. 3-28: Security prompt prior to final deletion of an association

3.3.3 Configuration of Network Variables/Communication Objects

The flags are defined in the property window. Depending on whether the property window is hidden or visible, the icon in the upper left corner of the property window will appear different (see chapter 3.2.2.2).



Fig. 3-29: Property window

Button	Action
	Hides the property window
	Shows the property window

3.3.3.1 Network Variables Section

The currently selected network variable is displayed in the left side of the property window. A network variable can be configured for several actions.

Sending after Reset	Sends the value of the communication object after a device reset. This reset occurs after a voltage reset, a node reset from the ETS and a software reset of the IEC application.
Read after Reset	Requests the device to read the current value from the bus after a reset.
Cyclical sending	When activated, the device sends its value to the bus in intervals specified in the box to the right..
Timeout	When activated, after a time interval without telegram update, the device will display a timeout on the associated FbDPT function block in the PLC.
Time base	Only active when cyclical sending or timeout is activated. Sets the time unit of the interval or timeout. Possible units are second and minute.

3.3.3.2 Communication Object Section

The currently selected communication object is displayed in the right side of the property window. A communication object can be configured with several values.

Number	Consecutive number. Is assigned by the system in dependence to the association sequence. This value cannot be changed.
Write	ETS3 flag for communication objects. See ETS3 manual.
Transmit	ETS3 flag for communication objects. See ETS3 manual.
Read	ETS3 flag for communication objects. See ETS3 manual.
Send group	A group address must be available as a sending group to each communication object. As default, the ETS3 defines the first assigned group address as "sending group". All available group address are displayed in the dropdown menu and are selected there.

3.4 Software Deinstallation

If the software is to be removed from the system, please select the "Software" function group in your control panel. Using the uninstall function, the "KNXTP1-IEC61131 Controller-IpRouter" entry can be removed.

4 The KNXnet/IP Router

The KNXnet/IP router routes the telegram from IP to Twisted-pair and vice versa. The KNX IP controller in combination with the first KNX module, functions as KNXnet/IP router.

4.1 Setup of the KNXnet/IP Router

The following chapter describes the steps required for utilizing the KNXnet/IP router within the ETS3. The first KNX module downstream from the KNX IP controller (and possibly downstream from other KNX incompatible modules) expands the KNX IP controller to a KNXnet/IP router. The subsequent KNX modules, if available, work in device mode.

4.1.1 Importing the Application Program into the ETS3

For the import of the ETS3 PlugIn, the corresponding vd4 file must be selected with the **FILE / IMPORT** function of the ETS3. The product database will then be updated automatically.

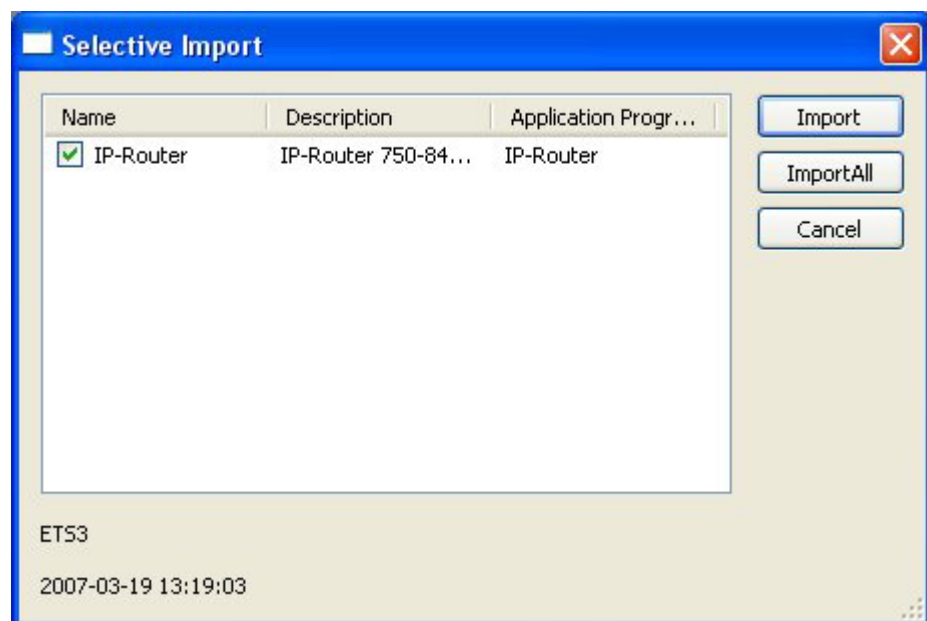


Fig. 4-1: Importing the application program

Using the **ADD DEVICE** function in ETS3, the WAGO device can be integrated into the project. The product finder of the ETS3 will be displayed for the selection of the KNXnet/IP router.



Fig. 4-2: Importing the application program, product finder

When the device in the ETS3 topology is clicked with the right mouse button, the installation routine will start. This process will be executed only once, at the first invocation.

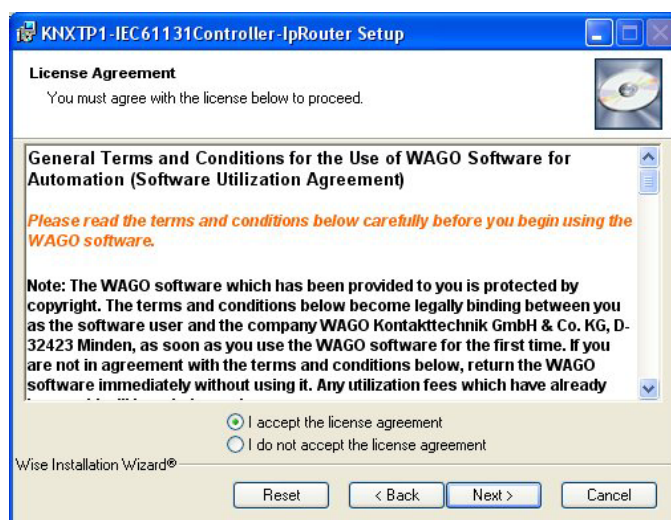


Fig. 4-3: Software installation, part 1

Please read the license agreement carefully and select "I accept the license agreement". The dialog is then confirmed with **NEXT**. Setup now installs the PlugIn.



Note

If the software has been installed already for a KNX module, the KNX IP controller or the KNXnet/IP router, the above dialog will not displayed.

4.2 Operating Elements

For the parameterization of the device, the "Edit parameter..." function in the context menu must be activated. The graphical user interface of the KNXnet/IP router will appear:

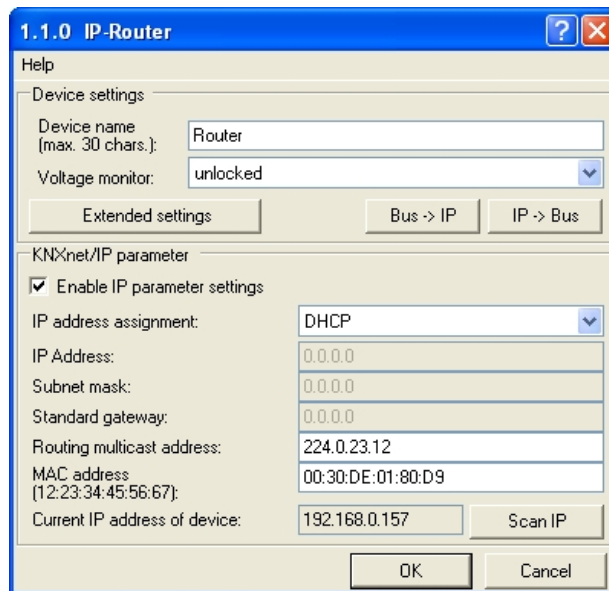


Fig. 4-4: User interface of the KNXnet/IP router

4.2.1 System Menu

The Windows system menu contains the following commands:

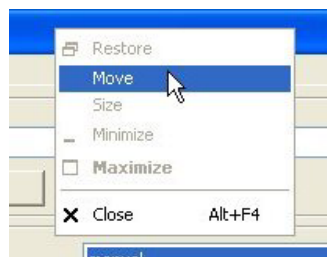


Fig. 4-5: System menu

Restore	Restores the active window to its original dimensions.
Move	Moves the active window on the screen.
Size	Changes the dimensions of the active window.
Minimize	Displays the active window as an icon.
Maximize	Displays the active window over the whole screen.
Close	Closes the active window.

4.2.2 Menu Item "Help"

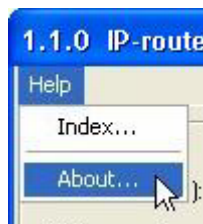


Fig. 4-6: Menu item "Help"

Help Index...	Open the online help
About...	Displays information to the PlugIn

4.3 Function

The principal task of the software is the setup of the KNXnet/IP router and its adaptation to the network.

4.3.1 Parameterization of the Device Settings

In the device settings section of the user interface, general data, such as device name, project number or installation number can be viewed and defined.

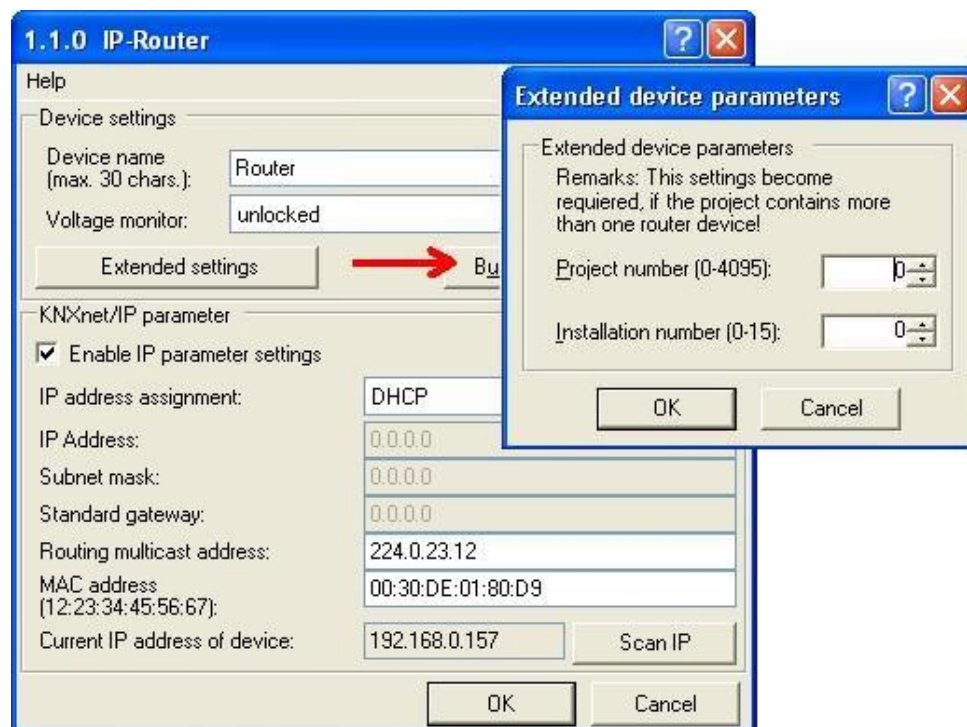


Fig. 4-7: Device settings of the KNXnet/IP router

This data can be modified with the following limitations:

- the device name must not have more than 30 characters
- the project number must be within the value range 1...4096
- the installation number must be within the value range 1...15
- the behavior on bus voltage loss can be set

A tunneling address must also be entered for the communication of the KNX devices via multicast communication.



Note

The project and installation numbers provide for the compatibility of future ETS development and should have the value 0 for current ETS projects.



Note

Erroneous entries will not be saved.



Note

The project number of the above dialog is **not** identical with the project number assigned in the ETS3.



Caution

The physical address (tunneling address) must originate in the line to which the KNXnet/IP router will be coupled, i.e.

Line: 1.3

Physical address: 1.3.XXX,

where X must be a number between 0 and 255..



Caution

The tunneling address is **not** managed by the ETS3. For this reason, the ETS3 cannot prevent a double assignment of the same physical address and it is recommended to use an address in the upper value range (e.g. 1.1.254, or similar).

4.3.2 Bus → IP Settings

This section describes the settings used to filter and confirm the telegrams that are transmitted from the bus to the IP.

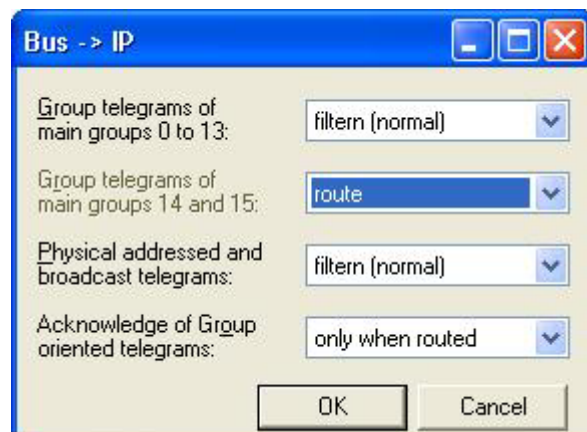


Abb. 4-8: Bus->IP settings

4.3.2.1 Main Groups 0 to 13

Filtering telegrams of main groups 0 to 13 can be set as follows:

- Filter (normal): Filtering is done using the filter table.
- Transmit: All telegrams are forwarded.
- Block: All telegrams are blocked.

4.3.2.2 Main Groups 14 and 15

Filtering telegrams of main groups 14 and 15 can be set as follows:

- Transmit: All telegrams are forwarded.
- Block: All telegrams are blocked.

4.3.2.3 Individually Addressed and Broadcast Telegrams

Filtering individually addressed and broadcast telegrams can be set as follows:

- Filter (normal): Filtering is done using the filter table.
- Transmit: All telegrams are forwarded.
- Block: All telegrams are blocked.

4.3.2.4 Telegram Confirmation of Group Oriented Telegrams

This section describes the settings used to confirm group oriented telegrams:

- Only if routed: All routed telegrams are confirmed.
- Always: All telegrams are confirmed.

4.3.3 IP → Bus Settings

This section describes the settings used to filter and confirm the telegrams that are transmitted from the IP to the bus.

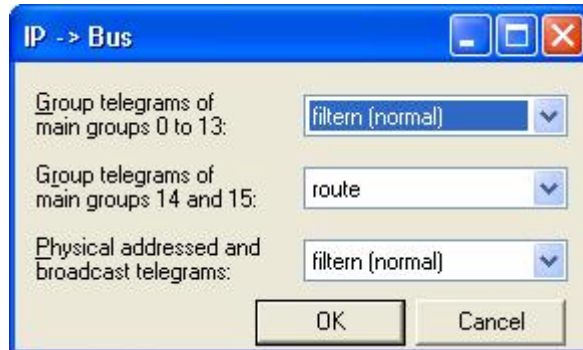


Abb. 4-9: IP->Bus settings

4.3.3.1 Main Groups 0 to 13

Filtering telegrams of main groups 0 to 13 can be set as follows:

- Filter normal: Filtering is done using the filter table.
- Transmit: All telegrams are forwarded.
- Block: All telegrams are blocked.

4.3.3.2 Main Groups 14 and 15

Filtering telegrams of main groups 14 and 15 can be set as follows:

- Transmit: All telegrams are forwarded.
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4.3.3.3 Individually Addressed and Broadcast Telegrams

Filtering individually addressed and broadcast telegrams can be set as follows:

- Filter normal: Filtering is done using the filter table.
- Transmit: All telegrams are forwarded.
- Block: All telegrams are blocked.

4.3.4 Parameterization of the KNXnet/IP Router

For proper integration of the device into the network, the KNXnet/IP router requires an IP address. In combination with the subset mask, the IP address uniquely defines the device in the network and is, therefore, the most important property of any network device.

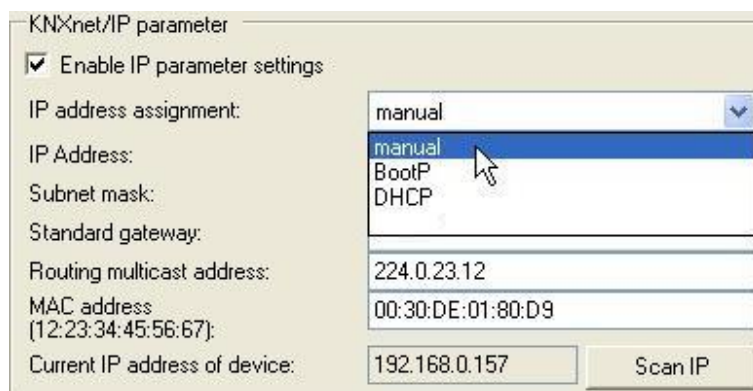


Fig. 4-10: KNXnet/IP parameters of the KNXnet/IP router

There are four methods to assign an IP address to the KNXnet/IP router, explained below.

4.3.4.1 Setting the KNXnet/IP Router via BootP or DHCP

Besides manual address allocation, two other options are available to automatically assign an IP address to the KNXnet/IP router. Common to both versions is that they independently assign a valid IP address to the KNXnet/IP router, only the configuration on the server side must be adjusted by the system administrator if required.

BootP

The "bootstrap protocol" BootP, which communicates based on UDP, assigns required data, such as IP address, subnet mask, etc., to a coupler or controller during the boot process. For this process, a BootP server is required. During booting, a client sends an UDP request as a broadcast to the available network to which the BootP server responds. It then returns a packet with the required data to the client. The BootP server is not necessarily required to be located in the same subnet as the client, however, in this case, a BootP gateway will be required.

DHCP

DHCP is a further development of BootP. Whereas BootP assigns IP addresses from an address table to the clients and cannot accept further clients when all addresses from the table have been assigned, DHCP offers the benefit of a possible dynamic assignment.

DHCP assignment techniques

- **Static assignment**
This assignment corresponds to the assignment by BootP. Each client always receives the same address.
- **Automatic assignment**
The server receives a list of IP addresses (defined by addressing space and subnet masks) from which it assigns a free address to a client. The client receives this address for an unlimited time.

- **Dynamic assignment**

Similar to the automatic assignment, but after a defined time, the client loses its IP address.

In all previously mentioned cases, it is mandatory to enter the MAC address which enables a globally unique assignment of a network device. The MAC address is shown on the address label at one side of the KNXnet/IP controller.



Fig. 4-11: MAC address on the controller

A routing multicast address representing an IP address must also be defined (see chapter 4.3.4.2).

4.3.4.2 Manual Setting of the KNXnet/IP Router

If the KNXnet/IP router is to be configured manually, the following data are required from the network administrator:

- IP address
- Subnet mask
- Standard gateway
- Routing multicast address
- MAC address

An IP address (Internet Protocol address) is a number for the addressing of computers and other devices in an IP network.

The subnet mask is a bit mask separating an IP address into a network and a device or host component. They are used in IP networks for routing decisions.

The gateway is a device which switches as interface between the various transmission protocols; depending on the network structure, it may have different features but it is valid for the whole network.

The IP routing multicast address is used for the routing of telegrams to IP. The multicast IP address 224.0.23.12 was reserved by IANA (Internet Assigned Numbers Authority) for this purpose (KNXnet/IP or EibNet/IP). If a different multicast IP address is required, it must originate in the range 239.0.0.0 to 239.255.255.255.

The "IP parameter setting" checkbox defines the plug-in's behavior. If the checkbox is deactivated, manual parameter setting is not allowed and the settings will not be downloaded to the device. However, if the checkbox is activated, the user will be allowed to set the parameters manually.

The "Scan IP" button allows users to search the network for the IP address of the router that is specified by the MAC address. If no suitable device is for MAC address, this will be indicated. Automatic device search is also performed directly after opening the parameter dialog.



Further information

More information on the "Internet Assigned Numbers Authority" can be found on the website <http://www.iana.org>.

An overview of reserved multicast addresses is found under <http://www.iana.org/assignments/multicast-addresses>.

In conclusion, the MAC address represents the unique identification of a network-capable device. This address cannot be changed. The MAC address consists of 48 bit, numbered from 47 to 0. The addresses are usually written in hexadecimal format, e.g., 00:30:DE:01:40:22.



Note

This writing convention is also used by the KNXnet/IP router, hence you should use this notation.

These parameters can be provided by the network administrator.

The following figure shows a fully configured KNX module operating as KNXnet/IP router.

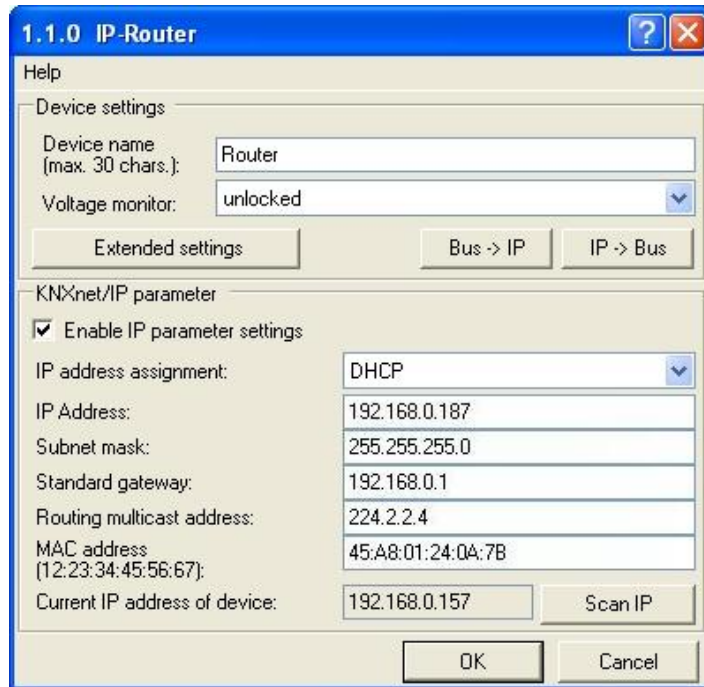


Fig. 4-12: Fully configured KNXnet/IP router

The "Advanced device settings" are described in chapter 4.3.1.

4.4 Software Deinstallation

If the software is to be removed from the system, please select the "Software" function group in your control panel. Using the uninstall function, the "KNXTP1-IEC61131 Controller-IpRouter" entry can be removed.

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